WHAT IS CLAIMED IS:

1. An extracorporeal blood circulation module for a cardiac perfusion system, comprising:

a substantially hollow support plane having front, back and side surfaces, said front surface of said support plane having a concave depression formed therein;

at least one blood handling component permanently affixed to said front surface of said support plane;

a venous blood reservoir having at least one flexible wall and at least one rigid wall, said venous blood reservoir being permanently affixed to said front surface of said support plane and covering said concave depression formed in said front surface thereof, said front surface of said support plane and said at least rigid wall of said reservoir thereby cooperating to define a vacuum chamber in fluid contact with said at least one flexible wall.

2. The extracorporeal blood circulation module of claim 1, further comprising:

a vacuum inlet formed in said hollow support plane and adapted to permit a vacuum line to extend into said vacuum chamber defined by said support plane and said at least one rigid wall.

3. The extracorporeal blood circulation module of claim 1, wherein said at least one blood-handling component includes an oxygenator.

4. The extracorporeal blood circulation module of claim 3, wherein said at least one blood-handling component further includes a blood filter.

5. The extracorporeal blood circulation module of claim 4, wherein said front surface of said support plane has structures formed therein adapted to receive said at least one blood handling component and facilitate fixation of said at least one blood handling component to said front surface of said support plane.

6. The extracorporeal blood circulation module of claim 1, further comprising:

a gasket, disposed between said reservoir and said front surface of said support plane.

7. The extracorporeal blood circulation module of claim 1, wherein the priming volume for the module is less than 1000 cubic centimeters.

8. The extracorporeal blood circulation module of claim 1, wherein said support plane is made of thermoformed high-density polystyrene.

9. A support structure for a plurality of blood-handling components in an extracorporeal blood circulation circuit, comprising:

front, back, and side walls arranged in a substantially parallelepiped configuration;

an indentation formed in said front wall of said support structure and adapted to cooperate with a rigid wall of a venous blood reservoir to define a vacuum chamber between said reservoir and said front wall of said support structure.

10. The support structure of claim 9, further comprising:

at least one additional indentation formed in said front wall of said support structure adapted to securely receive one of: a blood oxygenator and a filter.

12. The support structure of claim 9, further comprising:

a vacuum port, formed in said support structure, adapted to receive a vacuum line therein and to permit said vacuum line to extend into said vacuum chamber.

13. The support structure of claim 9, wherein said support structure is made of thermoformed high-density polystyrene.

14. A method of performing a heart bypass operation, comprising:

(a) providing an extracorporeal blood circulation module having a substantially hollow

support plane with front, back and side surfaces, said front surface of said support plane having a concave depression formed therein;

(b) providing at least one blood handling component permanently affixed to said front surface of said support plane;

(c) providing a venous blood reservoir having at least one flexible wall and at least one rigid wall, said venous blood reservoir being permanently affixed to said front surface of said support plane and covering said concave depression formed in said front surface thereof, said front surface of said support plane and said at least rigid wall of said reservoir thereby cooperating to define a vacuum chamber in fluid contact with said at least one flexible wall.

15. A method in accordance with claim 14, further comprising:

(d) introducing a vacuum source into said vacuum chamber.

16. The method of claim 14, further comprising:

(d) forming a vacuum inlet in said hollow support plane to permit a vacuum line to extend into said vacuum chamber defined by said support plane and said at least one rigid wall.

17. The method claim 14, wherein said at least one blood-handling component includes an oxygenator.

18. The method of claim 17, wherein said at least one blood-handling component further includes a blood filter.

19. The of claim 16, further comprising:

(e) forming structures on said front surface of said support plane adapted to receive said at least one blood handling component and facilitate fixation of said at least one

blood handling component to said front surface of said support plane.

20. The method of claim 14, further comprising:

(d) disposing a gasket between said reservoir and said front surface of said support plane.

21. The method of claim 14, further comprising:

(d) priming said module with less than 1000 cubic centimeters of priming fluid.

22. The method of claim 14, further comprising:

(d) forming said support plane out of of thermoformed high-density polystyrene.

23. A minimized, integrated extracorporeal blood circuit module, comprising:

a support plane for carrying blood-handling components of the module and interconnecting tubing between said blood-handling components;

a soft-shell venous blood reservoir having at least one rigid wall and at least one flexible wall;

a recess formed in a front surface of said support plane;

a vacuum port adapted to permit extension of a vacuum source into said recess;

wherein said reservoir is sealably mounted on said support plane covering said recess, such that said rigid wall of said reservoir and said front surface of said support plane in the area of said recess cooperate to define sealed vacuum chamber in fluid communication with said flexible wall of said reservoir.

24. The blood circuit module of claim 23, further comprising:

a blood oxygenator, rigidly attached to said front surface of said support plane.

25. The blood circuit module of claim 24, further comprising:

a filter, rigidly attached to said front surface of said support plane.

26. The blood circuit module of claim 23, wherein said support plane is made of thermoformed high-density polystyrene.

27. An extracorporeal blood circulation module for a cardiac perfusion system, comprising:

a rigid support plane having a front surface and a concave depression formed in said front surface;

a venous blood reservoir having aflexible wall and a rigid wall, said venous blood reservoir being permanently affixed to said front surface of said support plane covering said concave depression;

wherein said rigid wall cooperates with said concave depression to define a vacuum chamber adjacent to said at least one flexible wall.

28. The extracorporeal blood circulation module of claim 27, further comprising:

a vacuum port formed in said support plane adapted to introduce negative pressure in said vacuum chamber.

29. The extracorporeal blood circulation module of claim 28, further comprising:

a blood oxygenator, fixedly mounted on said front surface.

30. The extracorporeal blood circulation module of claim 29, further comprising:

a blood filter, fixedly mounted on said front surface.

31. The extracorporeal blood circulation module of claim 30, further comprising:

interconnective tubing coupled between said venous blood reservoir, said blood oxygenator, and said blood filter.

32. The extracorporeal blood circulation module of claim 27, wherein said support plane is made of thermoformed high-density polystyrene.